

Version 1.4

Response Rate Definitions

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Census Bureau Standard

Authored by:

Nancy A. Bates (DSD)
(Team Leader)

Deborah H. Griffin (DIR)

Rita J. Petroni (ESMPD)

James B. Treat (PRED)

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Document Management & Control ¹

Version	Issue Date	Approval	Description
1.0	05 July 05	Associate Directors	Initial Release
1.1	09 Mar 06	Quality Manager	Inserted hyperlinks for supporting documents.
1.2	28 Mar 06	Quality Manager	Inserted Implementation & Inquiry sections
1.3	01 Aug 06	Configuration Mgr.	Updated hyperlink for supporting document B
1.4	21 Jun 07	Quality Manager	Removed hyperlinks for supporting documents.

¹ **The most current version of this document is maintained on the Census Bureau Intranet and may be accessed from the Methodology & Standards Council Intranet website.**

Census Bureau Standard: Response Rate Definitions

Introduction and Background

Broad consensus exists on the importance of measuring and reporting survey quality. The Office of Management and Budget (OMB, 2001) provides general direction for reporting both sampling and nonsampling errors. Statistics Canada (2000) requires mandatory documentation of response rates for census, survey, or administrative data. Progress to improve consistency in reporting of survey errors is evident in recent OMB and Federal Committee on Statistical Methodology efforts. Measures of sampling error and response rates are the most routinely reported measures of quality.

Although response rates are considered key measures of survey quality, they have long suffered from wide variations in definition. Recently, there have been attempts to standardize the calculation of response rates to provide a common basis for comparison. Bates, Doyle and Winters (2000) and Atrostic, Bates, Burt and Silberstein (2001) recommended definitions and measurement methods to improve consistency. The American Association for Public Opinion Research (AAPOR) provided a set of six standard definitions of response rates as well as other formulae for calculating cooperation rates, refusal rates, and contact rates (AAPOR, 2004). On the basic principles, general consensus now exists on how response rates should be calculated.

The Census Bureau standard requires that response rates be cited or made available when probability-based survey or census data are reported. The purpose of this document is to align Census Bureau reporting of response rates with emerging standards when appropriate and to provide guidelines for Census Bureau use where existing external standards are ambiguous or incomplete. The response rates are defined for the purpose of providing indications of the quality of reported survey and census data.

Consistency with External Standards

At the most basic level, response rates can be simply viewed as the result of dividing the number of responding units by the number of eligible units. To accomplish this, AAPOR (2004) suggests that for household surveys, all units be classified into four basic groups:

1. units that were eligible and interviewed,
2. units that were eligible and not interviewed,
3. units that were ineligible, and
4. units for which eligibility could not be determined.

The Census Bureau standard builds off of these four primary classifications and for economic surveys and censuses, additionally considers administrative record data as a means of classifying reporting units.

Alternative treatment of units with unknown eligibility and complete (versus partial) units lead to different AAPOR response rate definitions (AAPOR, 2004). Rather than allowing for alternative response rates definitions, the Census Bureau standard states that cases of unknown eligibility should be considered, for the purpose of calculating the response rate, equivalent to units that were eligible and not interviewed/responding. For some applications it is recognized that eligibility can be estimated for units classified with unknown eligibility. This standard requires surveys and censuses to establish definitions for what qualifies a unit as an interviewed/responding unit. Units where enough information is obtained to satisfy this definition are considered interviewed/responding units.

AAPOR (2004) provides detailed allocation of survey disposition codes according to the four main classification categories. This standard acknowledges that each survey or census needs to take its universe (or target population) into account in any assignment of disposition codes to these four categories. For example, a household survey that interviews and summarizes data for both occupied and vacant units would define vacant units as eligible, while a household survey that is limited to occupied households would classify these same vacant units as ineligible. Although guidance is given, this is one area where the standards require that flexibility exist in order to produce the most meaningful response rates.

Presentation of Standards

These standards are presented in two supporting documents. The first one covers response rates for demographic surveys and decennial censuses (Supporting Document A) while the second covers economic surveys and censuses (Supporting Document B). While one set of standards covering demographic, decennial, and economic surveys and censuses was seen as desirable, it was quickly recognized that separate standards were required. The AAPOR standards, for example, are not appropriate for economic surveys. The characteristics of data in economic surveys (i.e., businesses of varying sizes, use of administrative record data) differ markedly from demographic surveys, warranting a set of economic survey-specific standards. Additionally, some AAPOR definitions are crafted for surveys of *specifically named persons* but Census Bureau surveys and censuses are typically *address-based*.

These two supporting documents include three sections – variables, rates and formulae, and reporting requirements. To produce standardized rates, there must be common definitions of the component parts. In the case of response rates, the component parts consist of outcome or disposition codes. Variables are defined as groupings of outcomes. Variables are divided into major variables (those required to produce the primary response rates) and detailed variables (those required to produce detailed breakdowns of unit nonresponse by type of nonresponse). The detailed data are valuable for studying response trends and documenting new outcomes as a result of technological or other societal change. The rates and formulae section includes the specific formulae used to calculate each of the primary and detailed rates. In both of these sections, consistency with AAPOR standards is noted for demographic surveys and decennial censuses. The final section, reporting requirements, documents the required text that should accompany response rates. Reporting requirements are needed to provide important information such as the survey universe and the definition of interviewed/responding units.

Scope

This standard covers all probability-based surveys and censuses, including evaluations and tests. This includes decennial and economic census programs and demographic and economic surveys. The focus is on unit-level response rates. Reporting of item nonresponse, though important, is considered outside the scope of this standard. Similarly, it is recognized that additional measures related to unit nonresponse may be desirable. For internal monitoring and other purposes, the response rates set forth in this standard may not always meet the analyst's needs (e.g., unique adjusted measures of response for longitudinal surveys, specialized rates requested by sponsors, or calculation of historical trend rates). In such cases, other rates may be computed. This standard does not cover those additional rates.

Weighting and Applications for Complex Survey Designs

Weighted response rates are recommended for all demographic surveys and censuses. For establishment surveys and censuses, the most appropriate weighted response rate may be the quantity response rate or the total quantity response rate (see Supporting Document B).

Weighted response rates provide the most appropriate measure because they take sample design and probabilities of selection into account. As such, they reflect potential effects of nonsampling error and whether portions of the population are underrepresented due to nonresponse (Jabine 1994; Scheuren et al. 1996). However, there are situations when an unweighted response rate is desirable, for example, as a data collection workload measure or as a means of monitoring progress in the field (OMB, 2001). Consequently, the Census Bureau standard recommends, but does not require, that rates must always be weighted. However, the standard does require that published response rates must indicate if a rate is weighted or unweighted.

The calculation of response rates for multi-stage surveys and surveys that include sub-sampling can use the Census Bureau standards, applying the appropriate weights. AAPOR (2004, p. 33) provides specific guidance on calculation of response rates in instances of multi-stage designs and two phase designs that incorporate nonresponse subsampling.

Responsibilities

Program areas will be responsible for the following:

- The implementation and enforcement of this standard;
- The preparation of the appropriate information/materials required by this standard; and
- The preparation of response rates based on this standard.

The Methodology and Standards Council will be responsible for the following:

- The initiation of periodic evaluations, reviews, and updates to this standard, as necessary; and
- Guidance to program areas in the implementation and usage of this standard.

Implementation

The standard is effective July 5, 2005.

Inquiries

Direct all questions related to the interpretation of this Standard to the Census Bureau Methodology and Standards Council.

Supporting Documents

- A. Variables, Rates and Formulae for Calculating Response Rates and Reporting Requirements: Demographic Surveys and Decennial Censuses
- B. Variables, Rates and Formulae for Calculating Response Rates and Reporting Requirements: Economic Surveys and Economic Censuses
- C. References

Recommended by the Census Bureau Methodology and Standards Council:

Signed M.R. Tupek, July 5, 2005

Alan R. Tupek
Chair, Methodology and Standards Council
Chief, Demographic Statistical Methods Division

Signed R Singh, July 5, 2005

Rajendra P. Singh
Chief, Decennial Statistical Studies Division

Signed Howard Hogan, July 5, 2005

Howard Hogan
Chief, Economic Statistical Methods and Programming Division

Signed Ruth Ann Killion, July 5, 2005

Ruth Ann Killion
Chief, Planning, Research, and Evaluation Division

Signed Tommy Wright, July 5, 2005

Tommy Wright
Chief, Statistical Research Division

Concurrence:

Signed Theodore A. Johnson, July 5, 2005

Theodore A. Johnson
Associate Director for Administration
and Chief Financial Officer

Signed Preston Jay Waite, July 5, 2005

Preston Jay Waite
Associate Director for Decennial Programs

Signed M. R. Tupek, July 5, 2005

Alan R. Tupek
Acting Associate Director for Demographic Programs
Chair, Methodology and Standards Council

Signed Thomas L. Mesenbourg, Jr., July 5, 2005

Thomas L. Mesenbourg, Jr.
Acting Associate Director for Economic Programs

Signed Brian Monaghan for Marvin D. Raines, July 5, 2005

Marvin D. Raines
Associate Director for Field Operations